

**Amendments to and Listing of the Claims:**

Please amend claims 1, 2, 3, 7, 10, 11, and 20 and cancel claims 21-28 without prejudice to the filing of a divisional application so that the claims read as follows:

1. (Currently Amended) A flexible printed circuit board having a copper thin film made of copper or an alloy containing primarily copper and directly formed on at least one side of a plastic film substrate, wherein

said copper thin film has a two-layer structure comprising a surface layer having a crystalline structure and a bottom layer having a polycrystalline structure formed between said surface layer and said plastic film substrate,

said ~~copper~~ copper thin film has an x-ray diffraction pattern in which an x-ray relative intensity ratio (200)/(111), that is a ~~value~~ value obtained by dividing a peak intensity of the crystal lattice plane index (200) by a peak intensity of the crystal lattice plane index (111), is 0.1 or less, and

said bottom layer is configured ~~[[a]]s~~ such that functional groups are generated on said plastic film substrate through plasma processing by glow discharge using a mixture gas containing nitrogen followed by evaporation to form copper metal or an alloy containing primarily copper on said plastic film substrate, wherein the metal or alloy bonds covalently to the functional groups of said plastic film substrate using mixture gas containing nitrogen, thereby forming metal made of copper or an alloy containing primarily copper, and then said metal and atoms constituting said plastic film substrate are chemically bonded.

2. (Currently Amended) The flexible printed circuit board in accordance with claim 1, wherein said surface layer is composed of crystal grains having at least the crystal lattice plane index (111) and that said crystalline structure is a columnar structure.

3. (Currently Amended) The flexible printed circuit board in accordance with claim 1, wherein said surface layer is composed of columnar crystal grains having at least the crystal lattice plane index (111) and that said crystal grains are formed into a cylindrical shape, a polygonal columnar shape or a shape of a mixture of these.

4. (Previously Presented) The flexible printed circuit board in accordance with claim 1, wherein said surface layer is composed of columnar crystal grains having at least the crystal lattice plane index (111) and said crystal grains are formed into a needle shape so that the short-axis diameters thereof are gradually reduced toward the side of said bottom layer making contact with said plastic film substrate.

5. (Previously Presented) The flexible printed circuit board in accordance with claim 1, wherein the columnar crystal grains having the crystal lattice plane index (111) and constituting said surface layer have a plane of said crystal lattice plane index (111) to be arranged according to preferred orientation in parallel to the surface of said plastic film.

6. (Cancelled)

7. (Currently Amended) A flexible printed circuit board comprising a copper thin film made of copper or an alloy containing primarily copper directly formed on at least one side of a plastic film substrate, and copper formed on said copper thin film by the electrolytic plating method, wherein

said copper thin film has a two-layer structure comprising a surface layer having a crystalline structure and a bottom layer having a polycrystalline structure formed between said surface layer and said plastic film substrate,

said surface layer is composed of crystal grains having at least the crystal lattice plane index (111) and the grain size of the short axis of said crystal grains is 20 nm to 80 nm, and

said bottom layer is configured ~~[[as]]~~ such that functional groups are generated on said plastic film substrate through plasma processing by glow discharge using a mixture gas containing nitrogen followed by evaporation to form copper metal or an alloy containing primarily copper on said plastic film substrate, wherein the metal or alloy bonds covalently to the functional groups of said plastic film substrate ~~using mixture gas containing nitrogen, thereby forming metal made of copper or an alloy containing primarily copper, and then said metal and atoms constituting said plastic film substrate are chemically bonded.~~

8. (Cancelled)

9. (Previously Presented) The flexible printed circuit board in accordance with claim 1, wherein said bottom layer has a spherical structure.

10. (Currently Amended) A flexible printed circuit board comprising a copper thin film made of copper or an alloy containing primarily copper directly formed on at least one side of a plastic film substrate, and copper formed on said copper thin film by the electrolytic plating method, wherein

said copper thin film has a two-layer structure comprising a surface layer having a columnar crystalline structure and a bottom layer having a spherical polycrystalline structure formed between said surface layer and said plastic film substrate,

said bottom layer is configured ~~[[as]]~~ such that functional groups are generated on said plastic film substrate through plasma processing by glow discharge using a mixture gas containing nitrogen followed by evaporation to form copper metal or an alloy containing primarily copper on said plastic film substrate, wherein the metal or alloy bonds covalently to the functional groups of said plastic film substrate using mixture gas containing nitrogen, thereby forming metal made of copper or an alloy containing primarily copper, and then said metal and atoms constituting said plastic film substrate are chemically bonded, and

the diameter of a crystal grain of the spherical crystalline structure of said bottom layer is made of smaller than the short-axis diameter of a crystal grain of the columnar polycrystalline structure of said surface layer.

11. (Currently Amended) A flexible printed circuit board comprising a copper thin film made of copper or an alloy containing primarily copper directly formed on at least one side of a plastic film substrate, and copper formed on said copper thin film by the electrolytic plating method, wherein

said copper thin film has a two-layer structure comprising a bottom layer making contact with said plastic film substrate and a surface layer formed on said bottom layer,

said bottom layer is configured ~~[[as]]~~ such that functional groups are generated on said plastic film substrate through plasma processing by glow discharge using a mixture gas

containing nitrogen followed by evaporation to form copper metal or an alloy containing primarily copper on said plastic film substrate, wherein the metal or alloy bonds covalently to the functional groups of said plastic film substrate using mixture gas containing nitrogen, thereby forming metal made of copper or an alloy containing primarily copper, and then said metal and atoms constituting said plastic film substrate are chemically bonded, and

the fluctuation width of [[the]] an irregular face on the boundary face between said plastic film substrate and said bottom layer is in the range of 0.5 nm to 10 nm.

12. (Previously Presented) The flexible printed circuit board in accordance with claim 11, wherein said bottom layer has polycrystals.

13. (Previously Presented) The flexible printed circuit board in accordance with claim 9, wherein said bottom layer has a spherical structure having a diameter of 10 nm to 80 nm.

14. (Previously Presented) The flexible printed circuit board in accordance with claim 9, wherein said bottom layer has a film thickness of 10 nm to 100 nm.

15. (Previously Presented) The flexible printed circuit board in accordance with claim 1, wherein said copper thin film has a film thickness of 100 nm to 500 nm.

16. (Previously Presented) The flexible printed circuit board in accordance with claim 10, wherein said surface layer is composed of crystal grains having the crystal lattice plane index (111).

17. (Previously Presented) The flexible printed circuit board in accordance with claim 10, wherein the grain size of the short axis of the crystal grains having the crystal lattice plane index (111) and constituting said surface layer is 20 nm to 80 nm.

18. (Previously Presented) The flexible printed circuit board in accordance with claim 10, wherein said surface layer is composed of crystal grains having at least the crystal lattice plane index (111) and said crystal grains are formed into a needle shape so that the short-axis diameter thereof is gradually reduced toward the side of said bottom layer making contact with said plastic film.

19. (Previously Presented) The flexible printed circuit board in accordance with claim 18, wherein said surface layer is formed into a cylindrical shape, a polygonal columnar shape or a shape of a mixture of these.

20. (Currently Amended) The flexible printed circuit board in accordance with claim 1, wherein said plastic film substrate is made of at least one material selected from ~~among the~~ group consisting of polyimide film, polytetrafluorethylene ~~Teflon®~~ and liquid crystal polymer.

21-28. (Canceled)